

Effect of Contextual Learning Ability Against Students Understanding Math Concepts SMP

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Abstract

This study aims to determine whether or not there is the influence of contextual learning of math concepts students' comprehension ability. The subject of this study is the seventh grade students of SMP Negeri 10 Palembang. The research method used in this study is an experiment. The variables of this study was the ability of understanding the concept of students. Methods of data collection using a written test, the data obtained by using t test analysis. The results of this study found that there is the influence of contextual learning on the ability of junior high school students' understanding of mathematical concepts.

Key Words: Contextual Learning, understanding the concept.

I. INTRODUCTION

1.1. Background

Mathematics is taught at every level of education. One branch of mathematics that is taught in junior high school was geometry. Geometry can be used to develop the ability to think logically, but it is also effective geometry to help solve mathematical problems.

According to the quoted Soejadi Ikhsan (2008) "Although the geometry is taught, but realities on the ground indicate that the geometry is less dominated by the majority of students. There are still many students who have difficulty in learning geometry. Likewise, students' achievement in geometry is still not satisfactory. "

From interviews with some of the math teachers obtained information that the students' understanding of mathematical concepts, especially the material lines and angles are still less than satisfactory.

Learning geometry will be effective if in accordance with the intellectual preparedness, therefore the learning of geometry must be arranged according to logical rules in

accordance with the students' experience. Basically, the geometry has a significant opportunity compared with the other branches of mathematics because many objects that surround the environment geometry students.

Level of the education curricula (SBC) is the operational curriculum prepared and implemented by each educational unit. The components of the curriculum based on content standards and competencies that will be discussed here is the standard of competence, basic competencies and indicators.

Competency standards can be understood as a standardized competency for the level, class and certain semesters. This means that all schools on the same level should make students have a competence (Nasar, 2006:2).

Basic competencies to be achieved include the cognitive, psychomotor and affective. In this study the aspects to be assessed only cognitive aspects, in particularly for understanding the concept only.

The current curriculum requires a student-centered learning (student center) or in other words the emphasize on the aspects of performance of students while the teacher serves as fasilitator only. Contextual learning curriculum in line with the demands of student-centered learning.

According Kunandar (2007: 293) contextual approach (CTL) is a concept of learning that assume that children will learn better if the environment is created naturally, means learning to be meaningful if the child is "working" and "experience" for himself what he learned, not just "know."

Contextual learning (CTL) in principle is a concept that encourages teachers to learn to associate or connect the material to be taught by real world of students and also encourages students to make connections between the knowledge possessed by its application in everyday life. (Nurhadi, 2004 : 103)

1.2. Formulation of the problem

From the above it is at issue in this study was there any effect on the ability of understanding of contextual learning math concepts students?. Understanding of mathematical concepts is limited to material lines and corners only.

1.3. Research Purposes

The purpose of this study was to determine whether or not there is the influence of contextual learning on students' comprehension of mathematics concepts.

1.4. Benefit of Research

The results of this study are expected to be useful for teachers as an alternative learning that can be used in the learning process.

II. RESEARCH METHODS

2.1. Research Subjects

The subject of this research is the seventh grade students consisting of two classes.

Table I
Research Subjects

No	Class	Amount	Remark
1	VII.1	38	Class Experiments
2	VII.2	38	Class Control

2.2 Research Procedures

The research method used is the experiment with using one experimental class and one class of comparison or control class. The data was collected with a written test about the essay form as much as 5 about.

The steps undertaken research are:

1. Preparation

At this stage includes preparation in:

- Analysis of mathematics curricula based on the curriculum at junior level material VII class lines and angles associated with the indicators to be achieved.
- Creating a learning device in the form of syllabus, lesson plans, teaching materials, worksheets, lattice test questions, test questions and answer key complete with scoring.
- Validation of learning tools with experts and teachers.
- Test instruments to students who are not research subjects.

2. Implementation

At this stage includes:

- Both classes were given an early test with the aim to determine the ability of beginning students' understanding of mathematical concepts.
- In the experimental class were treated in the form of contextual learning while the control class with expository teaching
- Both classes were given a final test to see students' comprehension of mathematics concepts

3. Reporting.

After the data is collected then the data were analyzed using t test .

2.3. Data Analysis Techniques

After the final test result data obtained by the performed tests of normality for the data, followed by a test of homogeneity, and then performed a hypothesis test using t test.

III. RESULTS AND DISCUSSION

Prior research provides learning in both classes of research subjects, prior research provides preliminary tests to students in both classes with the aim to determine the ability of beginning students' understanding of mathematical concepts.

From the initial test results obtained the following data:

Table II
Preliminary Test Results Data

	Class Experiments	Class Control
\bar{X}	60,5	60,0

From this initial test results can be said that the initial capability of understanding the concept of students from the two classes are equal or homogeneous.

After initial tests are given and the conclusion that students from both classes have the capability of understanding mathematical concepts, the researcher gave the same treatment in the form of contextual learning in the classroom experiments and expository teaching on the control class. Lessons are given in each class as much as 4 times face to face.

In the first face to face in the classroom experiments have not seen any significant change, is possible because students are unfamiliar with this kind of learning. Students have not dared to ask questions and express his opinion, teachers are still more active than the students. In face to face both students were beginning to dare to ask or give his opinion has begun to shift the learning process centered on the students while the teacher is only as fasilitator only.

On third-and fourth-face teaching is completely switched on students (student center). This is seen from the learning process that occurs in the classroom. In this learning process students can construct new knowledge from their prior knowledge, students also had dared to ask questions and express their opinion both during group discussions and class discussions.

At each end-face students were given a test to see the extent to which achievement of the learning objectives. Data from tests of each face are as follows:

Table III
Data Test Results Every Face to Face

		Face to Face
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No.	Class	I	II	III	IV
1	Experiments	61,5	64,5	68,0	72,5
2	Control	60,5	62,5	60,5	63,5

From the above data shows that the experimental class the students' understanding of mathematical concepts is always an increase, while increasing the ability to control class students' understanding of mathematical concepts are not stable.

After 4 times face to face again the second grade students were given a final test to see if there are effects from the treatment given to the second class.

From the end of the test results obtained the following data:

Table IV
Data Test Results End

	Class Experiments	Class Control
n	38	38
\bar{X}	73,7	65,1
S^2	80,6	102,4

From the above data obtained by the combined standard deviation of 9.56. Having done the calculations using the $t_{\text{test}} = 3.90$ That obtained with $\alpha = 0.05$ and $df = 74$ then the value t does not exist at the table, since it is to determine the value t_{tab} done by interpolation in order to get the value $t_{\text{tab}} = 1.67$. From the value $T_{\text{hit}} = 3.90$ and the value $t_{\text{tab}} = 1.67$ it can be concluded that there is influence of contextual learning on students' comprehension of mathematics concepts.

This is consistent with the opinion Nur M (2000: 3) about the characteristics of contextual learning is: Learning design begins with solving problems that exist around the students and based on experience that has the students using a real context as a starting point. Presenting learning or exploratory activity, students create and elaborate symbolic models and their mathematical activities that are not formal as a bridge

between the real and the abstract. Not emphasize solely on computing, algorithms, and drill. Emphasis on understanding concepts and solving problems. Students got experience a significant learning process and understand mathematics by reasoning. Students learn mathematics with understanding, actively building new knowledge from their initial knowledge. Learning in a democratic and interactive.

In addition the results of this study also coincide with the opinions Kunandar (2007: 293) contextual approach (CTL) is a concept of learning that assume that children will learn better if the environment is created naturally, means learning to be meaningful if the child is "working" and "experienced "yourself what he learned, not just" know. "

IV. CONCLUSION AND SUGGESTIONS

From the results of data analysis can be concluded that there is the influence of contextual learning on the ability of students' understanding of mathematical concepts.

It is recommended to teachers should be able to make the contextual learning as an alternative learning that can be used in the learning process.

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